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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/991,079	Applicant(s) TSOURIKOV ET AL.	
	Examiner LAMONT M. SPOONER	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-13 and 16-20 is/are rejected.
- 7) ☐ Claim(s) 4, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. This office action is in response to applicant's arguments filed 12/30/2009. Claims 1-20 are currently pending and have been examined.

Response to Arguments

2. Applicant's arguments, see remarks, filed 12/30/09, with respect to the rejection(s) of claim(s) 5 and 16 under 35 USC 102(e) have been fully considered and are persuasive, wherein Newman properly incorporated by reference into Tsourikov, requires a 35 USC 103 rejection, as the indicated subject matter is deemed to be in different embodiments. The Examiner notes applicants arguments regarding claims 1, 2, 8, 11-13 and 20 remain unpersuasive, however, as claims 5 and 16 require a proper 35 USC 103 rejection which cannot be made as applicant has indicated in arguments p.12 paragraph 2, see also communication filed 3/11/10, "Tsourikov, et al. (United States Patent Application No. 09/991,079), and Tsourikov, et al. (United States Patent No. 6,167,370) were, at the time the invention of U.S. Application No. 09/991,079 was made, both commonly owned by, or subject to an obligation of assignment to, Invention Machine Corporation."

However, based upon further consideration, a new ground(s) of rejection is made in view of Boris Katz (Annotating the World Wide Web using Natural Language) in view of Yuret et al (Integrating Web Resources and Lexicons into a Natural Language Query System) in addition to the previous rejection of Tsourikov.

Regarding claim 1, applicant's argues page 1" At a general level, it should be understood that the Tsourikov **does not generate answers to questions, does not include a problem statement generator, does not include a knowledge base of answers, and does not include a knowledge base of answers where the answers have the form S-A-O-all as in claim 1.** Rather, Tsourikov teaches a system for improved document search and storage. (see Tsourikov, Abstract).

Tsourikov receives a "user request" (**which is not a question**) and semantically processes the request to find SAOs therein. Using keywords, candidate documents are found and downloaded. These downloaded candidate documents are semantically processed, and SAO structures are determined for each candidate document. Candidate documents that have SAO structures matching those from the user request are stored as "relevant" to the initial user request. That is the basic teaching of Tsourikov.

A search, e.g., a Web search, for documents yields better results when SAO structure matching is used. There is nothing about providing answers in Tsourikov, only storing relevant documents. (see Tsourikov, Abstract; col. 2, lines 20-46) Tsourikov includes other features, such as generating new SAO structures and document summaries, but, again, **none of this teaches finding answers to an input question.**”

However, the Examiner cannot concur with any of the applicant's above arguments. Regarding applicant's arguments “Tsoruiikov does not generate answers to questions”, it is apparent that applicant claims a user asking a question (query), and Tsourikov explicitly **teaches a natural language user request**, C.5 lines 60-65-his natural language request, at the least this is a query, and furthermore, request is defined as “the act of asking for something to be given or done” or “something asked for”, thus any query entered into the system, or "request" is interpreted as a question, and furthermore, Tsourikov then takes the natural language input and processes it into a structure used for searching, C.5 line 65-C.6 line 22, thus explicitly teaching a problem statement generation, and further teaches a knowledge base of S-A-O answers, Fig. 3 item 18-his DB of SAO

structures, displayable to user, C.4 lines 44, 55-his SAO structures stored in Unit 18, this is his explicit answer S-A-O structured knowledge base.

Applicant's expand on the above unpersuasive arguments on page 8, "The stored SAO structures are merely compared with SAO structures from the original user request." However, the Examiner notes, Tsourikov explicitly teaches, C.6 lines 37-C.7 line 8-providing new "solutions" to a users problem, providing an new ideas to the user in the form of S-A-O, this explicit response to the user request/question is an answer. The applicant has provided no explicit definition of an answer or distinguishing element at any part of the current claim to obviate the current rejection of claim 1.

Applicant further argues, page 8, While Tsourikov does discuss extracting S-A-Os from a user's request, a problem statement in the claimed forms is not generated. However, as explained above, the problem statement generated by Tsourikov, C.6 lines 10-18, his explicit Action Object, without subject, generation as not all elements are present in generating the request SAO structure, which he explains is not necessary because all sentences of the candidate documents are in that form, and this is how he explicitly is able to then generate an answer, relevant/closely S-A-O matching structure thus interpreted as an answer. The Examiner is unable

to make the determination that these normalized (wherein the Examiner notes, the normalization is only if a word requires normalization, for example to an infinitive form) are any different from applicant's claimed form. Applicant contends that Tsourikov searching is done using keywords, however, Tsourikov explicitly states, C.6 line 33-36, "the SAO structures of each document are used in the comparative steps where the **request SAO structures** are compared with the candidate document SAO structures."

Applicant then further argues, page 10, "However, Tsourikov does not transmit or display answers ...in S-A-O form. However, as discussed above, Tsourikov explicitly teaches, C.6 lines 37-C.7 line 8-**providing new "solutions" to a users problem, providing an new ideas to the user in the form of S-A-O, this explicit response to the user request/question is an answer.**

Regarding claims 2 and 13, applicant's arguments are unpersuasive as applicant's arguments are addressed above, and as Tsourikov teaches new answer S-A-O's each comprising query elements in the problem statement, Fig. 2 his "web" data search for documents, C.6 lines 23-37-for S-A-O's, C.6 lines 23-44-all new S-A-O's are added/stored in S-A-O DB, his

relevant permanently SAO structures new found by searching of the databases and then stored.

Regarding claim 20, applicant argues, "Even if Tsourikov generates a URL query, it does not teach that the URL query is generated from a problem statement in the form of A-O, S-A..." However, Tsourikov teaches, C.6 lines 22-26-his conversion of the query from "**request SAO structure**", and sending of the query to search the web, wherein, there is an inherent URL query generated necessary to search the web documents. Thus explicitly generating the URL query based on the **request** SAO of the user, wherein the request SAO, as discussed above, includes the form of for example problem statement generated including A-O form.

Applicant's arguments regarding claims 8, 11 and 12 incorporate the above discussion and are thus deemed unpersuasive as well.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, claim 3, line 2, "conduct said search" is in conflict with the search of claim 1, line 11, "to search the" and claim 2 line 2, "conduct a search", wherein there are multiple different searches, and further redundant search of the knowledge base is possible, which renders the claim confusing and fails to particularly point out and distinctly claim the subject matter of claim 3.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1, 2, 8, 11-13 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsourikov et al. (US 6,167,370).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per **claim 1**, Tsourikov teaches a system (Fig. 1 item 10-as his system) enabling a user to ask a question (query) and for providing the user with one or more answers or solutions to such question (C.5 lines 60-64-his user natural language request-his request as his query/question, C7 lines 1-8-his solutions as answers), the system comprising:

a knowledge base comprising a set of answers having the form S-A-O (Fig. 3 item 18-his DB of SAO structures, displayable to user), and further comprising links to documents corresponding to the set of answers (C.6 lines 45-51-his link to full sentences/documents corresponding to the answer);

a problem statement generator configured to receive a natural language query from a user apparatus (C.5 lines 60-67-his user natural

language request, C.5 line 55-C.6 line 22-his System 10 Unit 4-processing the request into request SAO structures, to be further used for searching, as his problem statement generator, Fig. 1 item 10-his user apparatus for entering the information, C.5 lines 60-62-his user input device) and to automatically generate a problem statement in the form A- O, S-A, S-X-0 or S, where S, A and O are query elements in the natural language query, where X indicates absence of a query element (ibid-his problem statement is generated by the system without user intervention discussion, taken/interpreted as automatically, C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement);

a server coupled to the knowledge base, the server configured to (Fig. 2, his web to system, item 10, his local DB as the knowledge base) search the knowledge base using the problem statement to find at least one S-A-O answer, wherein the A and 0, or S and A, or S and 0 or S query elements in the problem statement are also in the at least one S-A-O answer (Fig. 3 item 20-his comparison of SAO of user request/query and SAO of candidate documents, C.6 lines 23-44-his "request SAO structures

are compared with candidate the candidate document SAO structures", and his matches in document as answer elements in both problem statement and candidate document SAO's in knowledge base); and

a communication device configured to transmit the at least one answer S-A-O and associated active document links to the user apparatus (C.6 lines 37-51-his relevant document stored for display "as user desires" and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his "displaying to user", and displaying the reference to the user if marked relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information, C.6 line 45-67-his SAO for display).

As per **claim 2**, Tsourikov teaches a system as set forth in claim 1. Tsourikov further teaches wherein said server is configured to conduct a search a search of the World Wide Web, (C.6 lines 23-37-his web search, Fig. 2 item 10-his semantic processor system as server communicating with Web) identify documents that include new answer S-A-O's each comprising query elements in the problem statement, (Fig. 2 his "web" data search for documents, C.6 lines 23-37-for S-A-O's, each of these SAO's in

the candidate documents are new SAO's for the candidate documents, as his description does not teach the SAO's as being stored in the knowledge base before the Web is searched) store links to such documents, (C.6 lines 45-51-his page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his "displaying to user", and displaying the reference to the user if marked relevant) and add such new answer S-A-O's to the knowledge base (C.6 lines 23-44-all new S-A-O's are added/stored in S-A-O DB).

As per **claim 8**, Tsourikov teaches a system as set forth in claim 1. Tsourikov further teaches wherein said user apparatus includes a user digital computer for generating said problem statement and receiving said at least one answer S-A-O (Fig. 1, item 12, as applied to claim 1-display answer and generating problem statement discussion).

As per **claim 11**, Tsourikov teaches system as set forth in claim 1, wherein each of the at least one answer S-A-Os is represented in a sentence format (C.6 lines 45-51-his output sentence including SAO).

As per **claim 12**, Tsourikov teaches in a digital computing system (Fig. 1 item 10-as his digital computing system), a method enabling a user to input a question (query) and providing the user with one or more

answers or solutions to such query (C.5 lines 60-64-his user natural language request-his request as his query/question, C7 lines 1-8-his solutions as answers), the method comprising:

receiving a natural language user query that includes one or more query elements in the form of A-O, S-A, S-X-O, or S, where X indicates absence of a query element (C.5 line 60-C.6 line 22-his user input, natural language request, and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement);

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's (subject-action-object) (Fig. 3 item 18-his DB of SAO structures, displayable to user, Fig. 3 items 10, 14-his semantic processor including analysis of information, and D of SAO-structures, C.4 lines 27-55-his automatic processing after user entry of request, each analysis process done automatically without user intervention), and further comprising active links to documents corresponding to the set of answers (C.6 lines 45-51-his link to full sentences/documents corresponding to the answer, stored in his knowledge base for future user review);

automatically generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language query, where S, A and O are query elements in the natural language query (C.5 lines 60-67-his user natural language request, C.5 line 55-C.6 line 22-his System 10 Unit 4-processing the request into request SAO structures, to be further used for searching, as his problem statement generator, his problem statement is generated by the system without user intervention discussion, taken/interpreted as automatically, C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement);

using the problem statement, identifying in the knowledge base at least one answer S-A-O, wherein the A and O, or S and A, or S and O, or S query elements in the problem statement are also in the at least one S-A-O answer (Fig. 3 item 20-his comparison of SAO of user request/query and SAO of candidate documents, C.6 lines 23-44-his "request SAO structures are compared with candidate the candidate document SAO structures", and his matches in document as answer elements in both problem statement and candidate document SAO's in knowledge base); and

transmitting signals representative of the at least one answer S-A-O to the user apparatus (C.6 lines 37-51-his relevant document stored for display "as user desires" and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his "displaying to user", and displaying the reference to the user if marked relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information, C.6 line 45-67-his SAO for display).

As per **claim 13**, Tsourikov teaches a method as set forth in claim 12. Tsourikov further teaches searching the World Wide Web (C.6 lines 23-37-his web search, Fig. 2 item 10-his semantic processor system as server communicating with Web), identifying documents that include new answer S-A-O's each comprising query elements in the problem statement (Fig. 2 his "web" data search for documents, C.6 lines 23-37-for S-A-O's, each of these SAO's in the candidate documents are new SAO's for the candidate documents, as his description does not teach the SAO's as being stored in the knowledge base before the Web is searched), storing links to such documents (C.6 lines 45-51-his page number linking to full sentences/documents corresponding to the answer as his active link, see

also Fig. 3 his “displaying to user”, and displaying the reference to the user if marked relevant), and adding such new answer S-A-O's to the knowledge base (C.6 lines 23-44-all new S-A-O's are added/stored in S-A-O DB).

As per **claim 20**, Tsourikov teaches a method of providing one or more solutions in response to a user query, the method comprising:

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's (subject-action-object) (Fig. 3 item 18-his DB of SAO structures, displayable to user, Fig. 3 items 10, 14-his semantic processor including analysis of information, and D of SAO-structures, C.4 lines 27-55-his automatic processing after user entry of request, each analysis process done automatically without user intervention), and further comprising active links to documents corresponding to the set of answers (see corresponding limitation in claim 12, Fig. 3 item 18-his DB of SAO structures, displayable to user, C.6 lines 37-51-his relevant document stored for display “as user desires” and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his “displaying to user”, and displaying the reference to the user if marked

relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information;

processing a natural language user query at a user device, including generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language user query (C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement), where S, A and O are query elements in the natural language query and X indicates absence of a query element (ibid-his request/query including elements extracted from his natural language request), converting the problem statement into a URL query (C.6 lines 22-26-his conversion of the query, and sending of the query to search the web, wherein, there is an inherent URL query generated necessary to search the web documents), and sending the URL query to a semantic server having access to the knowledge base (Fig. 2 items 10, 14, 18-his semantic processor system 10 as his server to user/knowledge base communication, the query sent to his web, C.6 lines 23-44-wherein the problem statements as a URL query contain the S, A, O of the query elements from the natural language query and must search the knowledge base of S-A-O for matching SAO).

generating a knowledge base query from the URL query at the semantic server and searching the knowledge base for one or more S-A-O solutions associated with the problem statement (C.6 lines 23-45-his web created knowledge base of documents from the web “identifies candidate documents and stores them” as his knowledge base, now being searched based on the URL query “his web search” from the semantic server, see above semantic server discussion, being queried from the generated user request directed to the web, his SAO is extracted from the documents and then matched for SAO), and if the one or more S-A-O solutions are found , converting the one or more S-A-O solutions into at least one HTML page and sending the at least one HTML page to the user device (C.6 lines 40-51-his display of the reference document, and based on match SAO, to the user as being transmitted by the Web, which communicates in HTML); and

processing the at least one HTML page at the user device to output the one or more S-A-O solutions to the user query (C.6 lines 40-51-his display of the reference document containing the S-A-O solutions to the user, the document being obtained from the Web, and presented to the user).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 11, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System).

As per **claim 1**, Katz teaches a system (page 1 column 1 paragraph 3-his **START** natural language system) enabling a user to ask a question (query) and for providing the user with one or more answers or solutions to such question (page 1 column 1 paragraphs 1, 2-his “information in response to questions” as his answers-the Examiner notes the paragraphs are cited by indentation, thus page 2 column 1 paragraph 1 ends at “(7) Bill surprised...”), the system comprising:

a knowledge base comprising a set of answers having the form S-A-O (page 1 paragraph 2-his “ternary expressions” or “T-Expressions”,

<subject relation object>, <Bill surprise Hillary>, index, page 2 column 1 paragraph 1, his Knowledge base for his “T-Expressions”, his subject as subject, relation as action, and object as object);

a problem statement generator configured to receive a natural language query from a user apparatus (page 2 column 1 paragraph 1, his user asks “Whom did Bill surprise with his answer?” as his natural language query, page 1 column 1 paragraph 1, 2-his START system, server, and World Wide Web-thus inherent without alternative possibility includes user apparatus for communication, page 2 column 1 paragraph 1-his START, which formulates his question “the system must **first** turn the question into a T-expression template” as his problem statement generator which receives his natural language query) and to automatically generate a problem statement in the form A- O, S-A, S-X-0 or S, where S, A and O are query elements in the natural language query, where X indicates absence of a query element (ibid-see above problem statement generator, wherein the START system generates the problem statement without user intervention, and generates T-Expression template for search of his knowledge base, his <Bill surprise whom> as his Subject action form, p.2 column 1, paragraph 2-his T-Expression without whom variable, as subject

relation problem statement, wherein the problem statement is generated without any object);

a server coupled to the knowledge base, the server configured to (page 1 column 1, paragraph 1-3-his START server to information access and knowledge base communication thus coupled) search the knowledge base using the problem statement to find at least one S-A-O answer, wherein the A and 0, or S and A, or S and 0 or S query elements in the problem statement are also in the at least one S-A-O answer (page 2 column 1 paragraph 1, his "feeding query (5) through a matcher ... knowledge base matches, page 2 column 1 paragraph 2, his "match" T-Expression template that could be matched against the T-expressions in the knowledge base"); and

a communication device configured to transmit the at least one answer S-A-O to the user apparatus (page 1 column 1 paragraph 3 "user can retrieve the information stored in the knowledge base by querying it in English-this it is inherent the communication device, see above server discussion, and transmission and user apparatus, for the user to receive stored information, page 2 column 1 paragraphs 1 and 2-his "(7) Bill surprised Hillary with his answer" and "(9) Yes, Bill surprised Hillary with his

answer" wherein "Bill surprised Hillary" includes (S-A-O) form, respectively).

Katz lacks explicitly teaching the underlined, a knowledge base comprising a set of answers having the form S-A-O, and further comprising links to documents corresponding to the set of answers;

a communication device configured to transmit the at least one answer S-A-O and associated active document links to the user apparatus.

However, Katz II teaches links to documents corresponding to the set of answers and a communication device configured to transmit the at least one answer S-A-O and a communication device configured to transmit associated active document links to the user apparatus (page 255 column 2 Figure **"Netscape: Start's reply"** his Source hyperlink, "The Internet Movie Database" related/linked to his answer/reply, page 261 paragraph 2 second Figure-his "Fortune 500 Companies" hyperlink to document/web page-see section 3.3 on page 260 column 1 and column 2-his "1998 Fortune 500" web page document, p.261 column 2 first and second figures as Netscape browser interface to user (the apparatus inherent), for user to display the information).

The Examiner thus invokes KSR, wherein the combination of prior art elements, Katz's Knowledge base with subject relation objects, and Katz II links to documents corresponding to the set of answers, and communication of associated active document links to the user, by one of ordinary skill in the art at the time of the invention, and communicating the answer and link to the user via browser interface, would have produced the predictable result of having a knowledge base comprising the set of answers and links to the documents corresponding to the set of answers providing a benefit of retrieval of the answer and link to be later presented to a user.

As per **claim 11**, Katz with Katz II makes obvious a system as set forth in claim 1. Katz further teaches wherein each of the at least one answer S-A-Os is represented in a sentence format (page 2 column 1 paragraph 2, "(9) Yes, Bill surprised Hillary with his answer", as his answer S-A-O, Bill-subject, surprised-action, Hillary-answer).

As per **claim 12**, Katz teaches in a digital computing system (page 1 column 1, paragraph 3-his **START** natural language system, page 1 column 1 paragraph 1, 2-his START system, server, and World Wide Web as his digital computing system), a method enabling a user to input a

question (query) and providing the user with one or more answers or solutions to such query (page 1 column 1 paragraphs 1, 2-his “information in response to questions” as his answers-the Examiner notes the paragraphs are cited by indentation, thus page 2 column 1 paragraph 1 ends at “(7) Bill surprised...”), the method comprising:

receiving a natural language user query that includes one or more query elements in the form of A-O, S-A, S-X-O, or S, where X indicates absence of a query element (page 2 column 1 paragraph 1, his user asks “Whom did Bill surprise with his answer?” as his natural language query, which formulates his question “the system must **first** turn the question into a T-expression template” as his problem statement generator which receives his natural language query, wherein the START system generates the problem statement without user intervention, and generates T-Expression template for search of his knowledge base, his <Bill surprise whom> as his Subject action form, p.2 column 1, paragraph 2-his T-Expression without whom variable, as subject relation problem statement, wherein the problem statement is generated without any object)

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's

(subject-action-object), (page 1 paragraph 2-his “ternary expressions” or “T-Expressions”, <subject relation object>, <Bill surprise Hillary>, index, page 2 column 1 paragraph 1, his Knowledge base for his “T-Expressions”, his subject as subject, relation as action, and object as object, page 3 column 1 paragraph 1, 2, 3-his START system “semantic” properties, deducing relationships, “T-expressiion in (18) and then adds it to the knowledge base”),

automatically generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language query, where S, A and O are query elements in the natural language query (page 2 column 1 paragraph 1, his user asks “Whom did Bill surprise with his answer?” as his natural language query, page 1 column 1 paragraph 1, 2-his START system, server, and World Wide Web, page 2 column 1 paragraph 1-his START, which formulates his question “the system must **first** turn the question into a T-expression template” as his problem statement generator which receives his natural language query, see above problem statement generator, wherein the START system generates the problem statement without user intervention, and generates T-Expression template for search of his knowledge base, his <Bill surprise whom> as his Subject action form,

p.2 column 1, paragraph 2-his T-Expression without whom variable, as subject relation problem statement, wherein the problem statement is generated without any object),

using the problem statement, identifying in the knowledge base at least one answer S-A-O (page 2 column 1 paragraph 1, his "feeding query (5) through a matcher ... knowledge base matches, page 2 column 1 paragraph 2, his "match" T-Expression template that could be matched against the T-expressions in the knowledge base"), wherein the A and O, or S and A, or S and O, or S query elements in the problem statement are also in the at least one S-A-O answer (page 1 column 1 paragraph 3 "user can retrieve the information stored in the knowledge base by querying it in English-this it is inherent the communication device, see above server discussion, and transmission and user apparatus, for the user to receive stored information, page 2 column 1 paragraphs 1 and 2-his "(7) Bill surprised Hillary with his answer" and "(9) Yes, Bill surprised Hillary with his answer" wherein "Bill surprised Hillary" includes (S-A-O) form, respectively); and

transmitting signals representative of the at least one answer S-A-O to the user apparatus (page 1 column 1 paragraph 3 "user can retrieve the

information stored in the knowledge base by querying it in English-this it is inherent the communication device, see above server discussion, and transmission and user apparatus, for the user to receive stored information, page 2 column 1 paragraphs 1 and 2-his "(7) Bill surprised Hillary with his answer" and "(9) Yes, Bill surprised Hillary with his answer" wherein "Bill surprised Hillary" includes (S-A-O) form, respectively, the server sending the answer to the user as the transmitted signal).

Katz lacks providing a knowledge base comprising active links to documents corresponding to the set of answers.

However, Katz II teaches links to documents corresponding to the set of answers (page 255 column 2 Figure "**Netscape: Start's reply**" his Source hyperlink, "The Internet Movie Database" related/linked to his answer/reply, page 261 paragraph 2 second Figure-his "Fortune 500 Companies" hyperlink to document/web page-see section 3.3 on page 260 column 1 and column 2-his "1998 Fortune 500" web page document, p.261 column 2 first and second figures as Netscape browser interface to user (the apparatus inherent), for user to display the information).

The Examiner thus invokes KSR, wherein the combination of prior art elements, Katz's Knowledge base with subject relation objects, and Katz II

links to documents corresponding to the set of answers, by one of ordinary skill in the art at the time of the invention, and would have produced the predictable result of having a knowledge base comprising the set of answers and links to the documents corresponding to the set of answers providing a benefit of retrieval of the answer and link to be later presented to a user.

As per **claim 20**, Katz teaches a method of providing one or more solutions in response to a user query

(page 1 column 1 paragraphs 1, 2-his "information in response to questions" as his answers), the method comprising:

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's (subject-action-object), (page 1 paragraph 2-his "ternary expressions" or "T-Expressions", <subject relation object>, <Bill surprise Hillary>, index, page 2 column 1 paragraph 1, his Knowledge base for his "T-Expressions", his subject as subject, relation as action, and object as object, page 3 column 1 paragraph 1, 2, 3-his START system "semantic" properties, deducing relationships, "T-expression in (18) and then adds it to the knowledge base");

processing a natural language user query at a user device (page 2 column 1 paragraph 1, his user asks “Whom did Bill surprise with his answer?” as his natural language query, page 1 column 1 paragraph 1, 2-his START system, server, and World Wide Web-thus inherent without alternative possibility includes user apparatus/device for communication), including generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language user query (page 2 column 1 paragraph 1, his user asks “Whom did Bill surprise with his answer?” as his natural language query, page 1 column 1 paragraph 1, 2-his START system, server, and World Wide Web, page 2 column 1 paragraph 1-his START, which formulates his question “the system must **first** turn the question into a T-expression template” as his problem statement generator which receives his natural language query, see above problem statement generator, wherein the START system generates the problem statement without user intervention, and generates T-Expression template for search of his knowledge base, his <Bill surprise whom> as his Subject action form, p.2 column 1, paragraph 2-his T-Expression without whom variable, as subject relation problem statement, wherein the problem statement is generated without any object), where S, A and O are query elements in the

natural language query and X indicates absence of a query element (ibid-see above S, A, O discussion), converting the problem statement into a URL query

(page 6 paragraph 1 column 2-his “S-rule, when triggered by an English question invokes the appropriate URL, manufactured using arguments obtained from the question-these arguments as his problem statement as discussed above), and sending the URL query to a semantic server having access to the knowledge base (his semantic START knowledge base as discussed above, for returning his answer, as described above in his method/server-see claim 1 server discussion, for answering a question, obtaining the answer from his knowledgebase)

generating a knowledge base query from the URL query at the semantic server and searching the knowledge base for one or more S-A-O solutions associated with the problem statement (ibid, inherent to the search of the knowledge base, thus a knowledge base query, as the above discussed URL, manufactured, is used for obtaining the information), and if the one or more S-A-O solutions are found (page 2 column 1 paragraphs 1, 2-his “matcher” matching his T-expressions, page 4 paragraphs 2-his

matching S-rule to T-expressions, as matching the S-Rule to his knowledge base), Katz lacks explicitly teaching

converting the one or more S-A-O solutions into at least one HTML page and sending the at least one HTML page to the user device; and
processing the at least one HTML page at the user device to output the one or more S-A-O solutions to the user query.

However, Katz II teaches converting the one or more S-A-O solutions into at least one HTML page and sending the at least one HTML page to the user device (page 261 column 2 paragraphs 1 and 2, his figures including his START's reply via browser, web page including S-A-O solution, "The directors of Gone with the wind are George" as his S-A-O solution via HTML page as sent to the user, as his answer query to user, and returned information from web); and

processing the at least one HTML page at the user device to output the one or more S-A-O solutions to the user query (ibid, page 261 column 2 paragraphs 1 and 2, his figures including his START's reply via browser, web page including S-A-O solution, "The directors of Gone with the wind are George" as his S-A-O solution via HTML page as sent to the user, as his answer query to user, and returned information from web and output to

the user as the users device, the device inherent to presenting the web page HTML document to the user, inherently requiring a device).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System), as applied to claim 1 above, and further in view of Paik et al. (Paik, 6,263,335), and further in view of Brown et al. (Brown, US 6,665,666).

As per **claim 5**, Katz and Katz II make obvious claim 1. Katz and Katz II lack teaching the underlined wherein user apparatus converts human voice signals into said problem statement.

However, Paik teaches a user apparatus converts human voice signals (C.7 lines 24-31-his “user interface input devices, voice recognition system).

The Examiner thus invokes KSR, wherein the combination of the known prior art elements, Katz’s question answer system and input apparatus, and Paik’s voice recognition for input, would have been obvious to one ordinarily skilled in the art at the time of the invention, to yield the

predictable result of having voice input to a user apparatus allowing an additional input methods.

Katz with Katz II and Paik lack explicitly teaching the underlined Katz and Katz II lack teaching the underlined wherein the user apparatus converts human voice signals into said problem statement.

However, Brown teaches a user apparatus converts human voice signals into a problem statement (C.7 lines 46-55-his "stand-alone workstation 195" with question answering system installed locally, C.8 lines 55-67-his query processing as generating a problem statement).

The Examiner thus invokes KSR, wherein the combination of the known prior art elements above including Katz's problem statement generator (see claim 1), Paik's voice input, with Brown's user apparatus (his stand alone work-station) processing the information into a problem statement, would yield the predictable result of voice input of processing a query on a local machine, thus allowing a user to function locally without requiring a network connection.

10. Claims 6, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II,

Integrating Web Resources and Lexicons into a Natural Language Query System), as applied to claim 1 above, and further in view of Paik et al. (Paik, 6,263,335)

As per **claim 6**, Katz and Katz II make obvious claim 1, but lack teaching wherein the user apparatus converts the at least one answer S-A-O into audio signals.

However, Paik teaches user apparatus converting output into audio signals (C.7 lines 32-41-his audio output on his user display subsystem as his user apparatus, and C.8 lines 23-27-his response/answer output on one of devices, including his audio output).

The Examiner thus invokes KSR, wherein the known components of Katz's answer S-A-O with Paik's conversion of output to audio, would have been obvious to one ordinarily skilled in the art to produce the predictable result of having a audio response, allowing a user to have audio output as a possible output as opposed to just visual output.

As per **claim 16**, Katz and Katz II make obvious claim 1. Katz and Katz II lack teaching the underlined converting human voice signals into said problem statement.

However, Paik teaches converting human voice signals (C.7 lines 24-31-his “user interface input devices, voice recognition system).

The Examiner thus invokes KSR, wherein the combination of the known prior art elements, Katz’s question answer system and problem statement, and Paik’s voice recognition for input, would have been obvious to one ordinarily skilled in the art at the time of the invention, to yield the predictable result of having voice input to a user apparatus, and therefrom generating the problem statement allowing an additional input methods for the query processing.

As per **claim 17**, Katz and Katz II make obvious claim 1, but lack teaching converting the at least one answer S-A-O into audio signals.

However, Paik teaches converting output into audio signals (C.7 lines 32-41-his audio output on his user display subsystem as his user apparatus, and C.8 lines 23-27-his response/answer output on one of devices, including his audio output).

The Examiner thus invokes KSR, wherein the known components of Katz’s answer S-A-O with Paik’s conversion of output to audio, would have been obvious to one ordinarily skilled in the art to produce the predictable

result of having a audio response, allowing a user to have audio output as a possible output as opposed to just visual output.

11. Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System), as applied to claim 1 above, and further in view of Mueller et al. (US 6,009,398) and further in view of Brown et al. (Brown, US 6,665,666).

As per **claim 7**, Katz and Katz II make obvious claim 1, but lack including voice-to-text and text-to-voice recognition capability and a client software module including the problem statement generator.

Katz and Katz II lack explicitly teaching, voice-to-text and text-to-voice recognition capability. However, Mueller teaches voice-to-text (VTT) and text-to-voice (TTV) recognition capability (C.4 lines 24-47-his text-to-speech and speech-to-text within his translation module 44, as a commercially available product).

The Examiner thus invokes KSR, wherein combinable prior art elements of Katz's answer S-A-O with Mueller's commercially available product of voice-to-text and text-to-voice, would have been obvious to one

ordinarily skilled in the art to produce the predictable result of having a user apparatus with the available product having VTT and TTV allowing audio/text response, allowing a user to have audio output as a possible output as opposed to just visual/text output.

Katz, Katz II with Mueller lack teaching a user apparatus including a client software module including the problem statement generator.

However, Brown teaches a user apparatus including a client software module including a problem statement generator (C.7 lines 46-55-his "stand-alone workstation 195" with question answering system installed locally, as his software, program module-see C.7 lines 10-15-his software discussion, C.8 lines 55-67-his query processing as generating a problem statement).

The Examiner thus invokes KSR, wherein the combination of the known prior art elements above including Katz's problem statement generator (see claim 1), with Mueller's VTT and TTV with Brown's user apparatus (his stand alone work-station) processing the information into a problem statement, would yield the predictable result of voice/text output of and answer on a local machine, thus allowing a user to function locally

without requiring a network connection, allowing a voice/text output option for a user.

12. Claims 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System), as applied to claim 1 above, and further in view of Mueller et al. (US 6,009,398).

As per **claim 18**, Katz and Katz II make obvious claim 12, but lack wherein generating the problem statement includes converting voice-to-text.

Katz with Katz II lack explicitly teaching wherein generating the problem statement includes converting voice-to-text. However, Mueller teaches voice-to-text (VTT) (C.4 lines 24-47-his text-to-speech and speech-to-text within his translation module 44, as a commercially available product).

The Examiner thus invokes KSR, wherein combinable prior art elements of Katz's problem statement generator (see claim 12) with Mueller's commercially available product of voice-to-text, would have been

obvious to one ordinarily skilled in the art to produce the predictable result of having an available product having VTT allowing audio input text processing, allowing a user to have audio input as a possible input opposed to just keyboard text output.

13. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System), and further in view of Paik et al. (Paik, 6,263,335), as applied to claim 17 above, and further in view of Mueller.

As per **claim 19**, Katz with Katz II with Paik make obvious claim 17, but lack teaching wherein generating the audio signals includes converting voice-to-text.

However, Mueller teaches voice-to-text (VTT) (C.4 lines 24-47-his text-to-speech and speech-to-text within his translation module 44, as a commercially available product).

The Examiner thus invokes KSR, wherein combinable prior art elements of Paik's audio signals with Katz II and Katz's problem statement generator (see claim 12) with Mueller's commercially available product of

voice-to-text, would have been obvious to one ordinarily skilled in the art to produce the predictable result of having an available product having VTT allowing audio input text processing, allowing a user to have audio input as a possible input opposed to just keyboard text output.

14. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz (Annotating the World Wide Web using Natural Language) in view of Katz et al. (hereinafter referred to as Katz II, Integrating Web Resources and Lexicons into a Natural Language Query System), as applied to claim 1 above, and further in view of Brown et al. (Brown, US 6,665,666).

As per **claim 8**, Katz and Katz II make obvious a system as set forth in claim 1. Katz and Katz II teach said user apparatus includes a user digital computer for receiving said at least one answer S-A-O (page 1 column 1 paragraph 3 "user can retrieve the information stored in the knowledge base by querying it in English-this it is inherent the communication device, see above claim 1, server discussion, and transmission and user apparatus, for the user to receive stored information, page 2 column 1 paragraphs 1 and 2-his "(7) Bill surprised Hillary with his answer" and "(9) Yes, Bill surprised Hillary with his answer" wherein "Bill

surprised Hillary" includes (S-A-O) form, respectively). Katz and Katz II lack explicitly teaching wherein said user apparatus includes a user digital computer for generating said problem statement and receiving said at least one answer S-A-O.

However, Brown teaches a user apparatus converts for generating a problem statement (C.7 lines 46-55-his "stand-alone workstation 195" with question answering system installed locally, C.8 lines 55-67-his query processing as generating a problem statement).

The Examiner thus invokes KSR, wherein the combination of the known prior art elements above including Katz's problem statement generator (see claim 1), with Brown's user apparatus (his stand alone work-station) processing the information into a problem statement, would yield the predictable result of voice input of processing a query on a local machine, thus allowing a user to function locally without requiring a network connection.

As per **claim 9**, Katz with Katz II with Brown makes obvious a system as set forth in claim 8. Katz with Katz II lacks teaching wherein said user apparatus includes a keyboard.

However, Brown teaches wherein said user apparatus includes a keyboard (Fig. 1 item 185-his workstation with keyboard). The Examiner thus invokes KSR, wherein the combined known prior art element of a keyboard of Brown with Katz's and Katz's II system, would produce the predictable result of having a keyboard input option providing the option to type in input to increase input accuracy.

As per **claim 10**, Katz with Katz II with Brown makes obvious a system as set forth in claim 8. Katz lack teaching said user apparatus further includes at least one user input device that includes a visual display monitor.

However Katz II teaches said user apparatus further includes at least one user input device that includes a visual display monitor (page 255 column 1-his abstract-his response to user queries in text, pictures, and other media, page 255 column 2 first figure, his Netscape: Start Reply as his display, present to user, inherent to visual display monitor).

Therefore, the Examiner thus invokes KSR, wherein the combined prior art element, including Katz II visual display monitor, to display the browser answer to the user, with Katz question answer system, would

produce the predictable result of displaying the answer to the user for user review.

Allowable Subject Matter

15. Claims 4, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAMONT M. SPOONER whose telephone number is (571)272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lamont M Spooner/
Examiner, Art Unit 2626

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626